Serial No.: 10/525,058

Filed: September 6, 2005

Page : 2 of 19

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

<u>Listing of Claims</u>:

1. (Currently Amended) An organic photovoltaic component, comprising:

a substrate having a first surface and a second surface opposite the first surface,

a first electrode, the first electrode being closer to the first surface of the substrate than the second surface of the substrate,

an organic semiconductor layer comprising a conjugated polymer and an acceptor, the first electrode being between the substrate and the organic semiconductor layer, and

a second electrode, the organic semiconductor layer being between the first and second electrodes,

wherein the substrate is a flexible sheet, the first surface of the substrate is structured, and the first electrode has a planar surface, and the organic photovoltaic component is configured so that, during use, light passes through the substrate prior to reaching the organic semiconductor layer.

- 2. (Cancelled).
- 3. (Previously Presented) The organic photovoltaic component of claim 1, further comprising an additional layer between the substrate and the first electrode, the additional layer having a surface that is structured.
 - 4. (Currently Amended) A method, comprising: providing an organic photovoltaic cell, comprising:

a substrate having a first surface and a second surface opposite the first surface, the first surface of the substrate being a structured surface;

Serial No.: 10/525,058

Filed: September 6, 2005

Page : 3 of 19

a first electrode, the first electrode being closer to the first surface of the substrate than the second surface of the substrate;

an organic semiconductor layer comprising a conjugated polymer an acceptor, the first electrode being between the substrate and the organic semiconductor layer; and

a second electrode, the organic semiconductor layer being between the first and second electrodes,

wherein the substrate is a flexible sheet <u>and the organic photovoltaic cell is configured so</u> that, during use, light passes through the substrate prior to reaching the organic semiconductor layer.

- 5. (Cancelled).
- 6. (Previously Presented) The method as defined in claim 4, further comprising disposing an additional layer on the structured surface of the substrate so that the additional layer has a structured surface that supports the semiconductor layer.
 - 7. (Currently Amended) A photovoltaic cell, comprising:

a substrate having a first surface and a second surface opposite the first surface, the first surface of the substrate being a structured surface;

a first electrode that is closer to the first surface of the substrate than the second surface of the substrate;

a second electrode, the first electrode being between the substrate and the second electrode; and

an organic semiconductor between the first and second electrodes,

wherein a surface of the first electrode is planar, and the substrate is flexible, and the photovoltaic cell is configured so that, during use, light passes through the substrate prior to reaching the organic semiconductor.

8. (Cancelled).

Serial No.: 10/525,058

Filed : September 6, 2005

Page : 4 of 19

9. (Previously Presented) The photovoltaic cell of claim 7, wherein a surface of the organic semiconductor is planar.

- 10. (Previously Presented) The photovoltaic cell of claim 9, wherein the first electrode is disposed on the first surface of the substrate.
- 11. (Previously Presented) The photovoltaic cell of claim 9, wherein the first electrode is a cathode.
- 12. (Previously Presented) The photovoltaic cell of claim 7, further comprising a planarized layer between the substrate and the first electrode.
- 13. (Previously Presented) The photovoltaic cell of claim 12, wherein the first electrode is disposed on a planarized surface of the planarized layer.
- 14. (Previously Presented) The photovoltaic cell of claim 7, further comprising a planarized layer between the organic semiconductor and the first electrode.
- 15. (Previously Presented) The photovoltaic cell of claim 14, wherein the first electrode is disposed on the substrate.
 - 16. (Currently Amended) A photovoltaic cell, comprising:
 - a flexible, structured substrate;
 - a first electrode;
 - a first layer, the first layer being between the substrate and the first electrode;
 - a second layer;
 - a second electrode; and
- an organic semiconductor between the first and second electrodes, the organic semiconductor comprising a conjugated polymer and an acceptor,

Serial No.: 10/525,058

Filed: September 6, 2005

Page : 5 of 19

wherein the second layer is between the first electrode and the organic semiconductor, the first electrode is structured, a surface of the first layer is structured, a surface of the second layer is planar, and a surface of the organic semiconductor is planar, and the photovoltaic cell is configured so that, during use, light passes through the substrate prior to reaching the organic semiconductor.

17-19. (Cancelled)

20. (Previously Presented) The photovoltaic cell of claim 16, wherein the substrate is

flexible.

21. (Previously Presented) The organic photovoltaic component of claim, 1 wherein the

acceptor comprises a fullerene.

22. (Previously Presented) The photovoltaic cell of claim 7, wherein the first electrode

has a structured surface.

23. (Currently Amended) A photovoltaic cell, comprising:

a polymeric flexible substrate having a structured surface;

a support layer having a surface;

a first electrode, the support layer being between the substrate and the first electrode;

a second electrode;

an organic semiconductor between the first and second electrodes, the organic

semiconductor comprising a conjugated polymer and an acceptor,

wherein:

the first electrode is between the support layer and the organic semiconductor; and

a surface of the organic semiconductor is planar, and

the photovoltaic cell is configured so that, during use, light passes through the

substrate prior to reaching the organic semiconductor.

Serial No.: 10/525,058

Filed: September 6, 2005

Page : 6 of 19

24. (Previously Presented) The photovoltaic cell of claim 23, wherein the surface of the support layer is structured.

- 25. (Previously Presented) The photovoltaic cell of claim 24, wherein the surface of the substrate is structured.
 - 26. (Cancelled).
- 27. (Previously Presented) The photovoltaic cell of claim 23, wherein the surface of the support layer is planar.
- 28. (Previously Presented) The organic photovoltaic component of claim 1, wherein the first surface of the substrate has a periodic structure.
 - 29. (Cancelled).
- 30. (Previously Presented) The method of claim 4, wherein the organic photovoltaic cell further comprises an additional layer between the substrate and the first electrode, and the additional layer has a surface that is structured.
- 31. (Previously Presented) The method of claim 4, wherein the first surface of the substrate has a periodic structure.
- 32. (Previously Presented) The photovoltaic cell of claim 7, wherein the first surface of the substrate has a periodic structure.
- 33. (Previously Presented) The photovoltaic cell of claim 25, wherein the structured surface of the substrate has a periodic structure.

Serial No.: 10/525,058

Filed: September 6, 2005

Page : 7 of 19

34. (Previously Presented) The photovoltaic cell of claim 33, wherein the periodic structure of the substrate is configured to impart light trapping during use of the organic photovoltaic component.

35. (Previously Presented) The photovoltaic cell of claim 25, wherein the structured surface of the support layer has a periodic structure.

36. (Currently Amended) An organic photovoltaic component, comprising:

a flexible substrate,

a first electrode,

an organic semiconductor layer, the first electrode being between the substrate and the organic semiconductor layer, the organic semiconductor comprising a conjugated polymer and an acceptor, and

a second electrode, the organic semiconductor layer being between the first and second electrodes,

wherein the substrate has a surface with a periodic structure <u>and the organic photovoltaic</u> component is configured so that, during use, light passes through the substrate prior to reaching the organic semiconductor layer.

- 37. (Previously Presented) The organic photovoltaic component of claim 36, wherein the periodic structure of the substrate is configured to impart light trapping during use of the organic photovoltaic component.
 - 38. (Currently Amended) A method, comprising:

providing an organic photovoltaic cell, comprising:

a flexible substrate having a structured surface;

a first electrode;

an organic semiconductor layer, the first electrode being between the substrate and the organic semiconductor layer, the organic semiconductor comprising a conjugated polymer and an acceptor; and

Serial No.: 10/525,058

Filed: September 6, 2005

Page : 8 of 19

a second electrode, the organic semiconductor layer being between the first and second electrodes;

wherein the organic photovoltaic cell is configured so that, during use, light passes through the substrate prior to reaching the organic semiconductor layer.

- 39. (Previously Presented) The method of claim 38, wherein the structure of the substrate is configured to impart light trapping during use of the organic photovoltaic component.
 - 40. (Currently Amended) A photovoltaic cell, comprising:
 - a flexible substrate having a surface with a periodic structure;
 - a first electrode supported by the structured surface of the substrate;
 - a second electrode;

an organic semiconductor between the first and second electrodes, the organic semiconductor comprising a conjugated polymer and an acceptor:

wherein the photovoltaic cell is configured so that, during use, light passes through the substrate prior to reaching the organic semiconductor.

- 41. (Previously Presented) The photovoltaic cell of claim 40, wherein the periodic structure of the substrate is configured to impart light trapping during use of the organic photovoltaic component.
- 42. (Previously Presented) The method of claim 4, wherein the acceptor comprises a fullerene.
- 43. (Previously Presented) The photovoltaic cell of claim 7, wherein the organic semiconductor comprises a conjugated polymer.
- 44. (Previously Presented) The photovoltaic cell of claim 16, wherein the organic semiconductor further comprises a fullerene.

Serial No.: 10/525,058

Filed: September 6, 2005

Page : 9 of 19

45. (Previously Presented) The photovoltaic cell of claim 43, wherein the organic semiconductor further comprises a fullerene.

- 46. (Previously Presented) The photovoltaic cell of claim 23, wherein the organic semiconductor further comprises a fullerene.
- 47. (Previously Presented) The organic photovoltaic component of claim 36, wherein the organic semiconductor further comprises a fullerene.
- 48. (Previously Presented) The method of claim 38, wherein the organic semiconductor further comprises a fullerene.
- 49. (Previously Presented) The photovoltaic cell of claim 40, wherein the organic semiconductor further comprises a fullerene.
- 50. (Previously Presented) The organic photovoltaic cell of claim 1, wherein the substrate comprises a polymer.
- 51. (Previously Presented) The organic photovoltaic cell of claim 1, wherein the substrate comprises PET.
 - 52. (Cancelled)
- 53. (Currently Amended) The organic photovoltaic cell of claim 52 1, wherein the substrate comprises a polymer.
- 54. (New) The organic photovoltaic cell of claim 1, wherein the first surface of the substrate has an aperiodic structure.

Serial No.: 10/525,058

Filed: September 6, 2005

Page : 10 of 19

55. (New) The organic photovoltaic cell of claim 54, wherein the aperiodic structure has a depth of 1-500 microns.

56. (New) The organic photovoltaic cell of claim 1, wherein the substrate comprises TiO_2 .